

WE CLAIM:

1. An aqueous peracid treatment composition, adapted for the removal of
an odor composition from a gaseous stream, the treatment composition comprising, in
5 an aqueous medium, an effective odor reducing amount of a peracid composition and an
effective soil removing amount of a surfactant composition comprising;



wherein m is 2 to 60, o and n are independently 0 to 40; R is a benzyl group, an
alkylaryl group or, if $1 \leq o + n \leq 20$, R is a C₁₋₁₈ alkyl group; R' is a benzyl group, an
10 alkylaryl group or,
if $o + n \leq 1$, R' is a -H group; and x is 1-6.

2. The composition of claim 1 wherein the peracid composition comprises a
peracetic acid composition, and the soil is elemental sulfur.

15 3. The composition of claim 2 wherein the aqueous treatment composition
comprises about 0.1 to 50 weight percent of a peracetic acid composition and about 0.1
to 30 weight percent of the surfactant.

20 4. The composition of claim 1 wherein the aqueous treatment composition
this additionally comprises about 0.1 to 25 weight percent of a sequestrant composition.

25 5. An aqueous treatment composition, adapted for direct contact with a soil
residue, the residue comprising an elemental sulfur, a carbonate, a phosphate, a silicate
or mixtures thereof, in a treatment zone, the composition comprising about 0.1 to 50
parts by weight of a peracid composition and about 0.1 to 30 weight percent of a
surfactant comprising:



wherein m is 2 to 60, o and n are independently 0 to 40; R is a benzyl group, an
30 alkylaryl group or, if $1 \leq o + n \leq 20$, R is a C₁₋₁₈ alkyl group; R' is a benzyl group, an

alkylaryl group or, if $o + n \leq 1$, R' is a -H group; and x is 1-6, for each one million parts of the aqueous treatment composition.

6. The composition of claim 5 wherein the treatment zone is adapted for
5 removal of an odor comprising a sulfur compound from a gaseous stream

7. The composition of claim 5 wherein the peracid composition comprises a peracetic acid composition.

10 8. The composition of claim 5 wherein the aqueous treatment composition comprises about 1.0 to 20 weight percent of a peracetic acid composition and about 0.1 to 20 weight percent of the surfactant.

15 9. The composition of claim 5 wherein the aqueous treatment composition this additionally comprises about 0.1 to 10 weight percent of a sequestrant composition.

10. A process for removing an inorganic soil composition from a surface, the process comprising contacting a surface with an aqueous solution comprising an effective inorganic removing amount of a surfactant comprising:



wherein m is 2 to 60, o and n are independently 0 to 40; R is a benzyl group, an alkylaryl group or, if $1 \leq o + n \leq 20$, R is a C₁₋₁₈ alkyl group; R' is a benzyl group, an alkylaryl group or, if $o + n \leq 1$, R' is a -H group; and x is 1-6.

25 11. The method of claim 10 wherein the inorganic soil comprises a soil comprising sulfur, sulfate, carbonate, silicate, phosphate or mixtures thereof.

12. The method of claim 10 wherein the surface is a hard surface.

30 13. The method of claim 10 wherein any of the EO, PO, BO residues are in the form of a block polymer segment.

14. The method of claim 10 wherein any of the EO, PO, BO residues are randomly polymerized .

5 15. The method of claim 10 wherein the surfactant is used in an amount of about 1 to 4000 ppm.

16. The method of claim 10 wherein the surfactant is used in an amount of about 2 to 1500 ppm.

10 17. The method of claim 10 wherein the surfactant is used in an amount of about 5 to 800 ppm.

15 18. The method of claim 10 wherein the aqueous treatment comprises an acid pH.

19. The process of claim 18 wherein the aqueous solution additionally comprises a peroxyacetic acid composition.

20 20. The process of claim 10 wherein the aqueous solution comprises a sequestrant

21. The process of claim 20 wherein the sequestrant comprises 1-hydroxyethylidene-1,1-diphosphonic acid.

25 22. The process of claim 20 wherein the aqueous treatment composition comprises about 1 to about 2000 parts by weight of surfactant and 1 to 800 parts of sequestrant for each one million parts by weight of the aqueous solution.

30 23. The process of claim 20 wherein the aqueous treatment composition comprises about 1 to 1000 parts surfactant and 1 to 500 parts sequestrant.

24. A process for removing an odor component comprising an inorganic scale containing compound from an gaseous stream and preventing or removing a soil in a gas treatment zone, the process comprising:

5 (a) contacting a gaseous effluent comprising the inorganic containing compound with a oxidizing agent in a treatment zone, forming an oxidized odor component and a soil; and

(b) preventing the formation of or removing at least a portion of the soil with an effective soil removing amount of a surfactant comprising:

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wherein m is 2 to 60, o and n are independently 0 to 40; R is a benzyl group, an alkylaryl group or, if $1 \leq o + n \leq 20$, R is a C₁₋₁₈ alkyl group; R' is a benzyl group, an alkylaryl group or, if o + n ≤ 1 , R' is a -H group; and x is 1-6.

15 25. The method of claim 24 wherein the oxidizing agent comprises an aqueous solution of an oxidizing agent, the aqueous solution additionally comprising the surfactant and the soil comprises elemental sulfur.

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26. The method of claim 24 wherein a gaseous stream is contacted within oxidizing agent in a treatment zone, and the treatment zone is contacted with the surfactant during a separate cleaning step.

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27. The method of claim 24 wherein any of the EO, PO, BO residues are in the form of a block polymer segment.

28. The method of claim 24 wherein the soil comprises elemental sulfur, sulfate, carbonate, phosphate, silicate or mixtures thereof.

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29. The method of claim 24 wherein the inorganic containing compound comprises elemental sulfur.

30. The method of claim 24 wherein the sulfur containing compound
5 comprises a carbonate.

31. The process of claim 24 wherein the odor removal, as measured by an odor threshold score, comprises about 20% or more.

10 32. The process of claim 24 wherein the treatment zone and comprises a wet scrubber tower.

15 33. The process of claim 24 wherein a venturi contactor is used to contact the gaseous stream with the agent.

34. The process of claim 32 wherein in the wet scrubber tower, the gaseous stream passes vertically against a countercurrent flow of finely divided particulates or thin streams of the oxidizing agent.

20 35. The process of claim 24 wherein the oxidizing agent composition comprises a peroxyacetic acid composition.

25 36. The process of claim 25 wherein the aqueous treatment composition comprises about 1 to about 4000 parts by weight of surfactant for each one million parts by weight of the aqueous solution.

37. The process of claim 25 wherein the aqueous solution comprises a sequestrant

30 38. The process of claim 37 wherein the sequestrant comprises 1-hydroxyethylidene-1,1-diphosphonic acid.

39. The process of claim 25 wherein one cubic foot of gaseous stream is contacted with about 0.01 to 10 liters of aqueous treatment solution.

5 40. The process of claim 24 wherein at least about 20 % of an odor forming compound selected from the group consisting of an organo-mercaptan, hydrogen sulfide or mixtures thereof, is absorbed and removed in the process from the plant atmosphere effluent and wherein the odor threshold is reduced by at least 20%.

10 41. The process of claim 32 wherein the wet scrubber comprises a packed column.

15 42. The process of claim 32 wherein, the wet scrubber column, the gaseous stream passes vertically with a cocurrent flow of finely divided particulates or streams of the aqueous peroxyacid treatment composition.

20 43. A process for removing a soil from a gas treatment zone, the process comprising:

- (a) contacting a gas a treatment zone with a treatment; and
(b) preventing the formation of or removing at least a portion of the inorganic soil from the treatment zone, the treatment comprising an effective inorganic soil removing amount of a surfactant comprising:



wherein m is 2 to 60, o and n are independently 0 to 40; R is a benzyl group, an alkylaryl group or, if $1 \leq o + n \leq 20$, R is a C₁₋₁₈ alkyl group; R' is a benzyl group, an alkylaryl group or, if o + n ≤ 1 , R' is a -H group; and x is 1-6.

25 44. The method of claim 43 wherein the soil comprises a carbonate soil.

30 45. The method of claim 43 wherein the soil comprises a phosphate soil.

46. The method of claim 1 wherein the soil comprises a soil selected from the group consisting of a soil comprising a sulfur and carbonate soil, a sulfur and phosphate soil, a carbonate and silicate soil, a carbonate and phosphate soil, or mixtures thereof.

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47. The method of claim 43 wherein the oxidizing agent comprises an aqueous solution of an oxidizing agent, the aqueous solution additionally comprising the surfactant.

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48. The method of claim 43 wherein a gaseous stream is contacted within oxidizing agent in a treatment zone, and the treatment zone is contacted with the surfactant during a separate cleaning step.

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49. The method of claim 43 wherein any of the EO, PO, BO residues are in the form of a block polymer segment.

50. The method of claim 43 wherein any of the EO, PO, BO residues are in the form of a randomly polymerized segment.

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51. The method of claim 43 wherein the inorganic soil comprises elemental sulfur.

52. The method of claim 43 wherein the inorganic soil comprises a carbonate.

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53. The process of claim 43 wherein the odor removal, as measured by an odor threshold score, comprises about 20% or more.

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54. The process of claim 43 wherein the oxidizing agent composition comprises a peroxyacetic acid composition.

55. The process of claim 43 wherein the aqueous treatment composition comprises about 1 to about 4000 parts by weight of surfactant for each one million parts by weight of the aqueous solution.

5 56. The process of claim 43 wherein the aqueous solution comprises a sequestrant

57. The process of claim 56 wherein the sequestrant comprises 1-hydroxyethylidene-1,1-diphosphonic acid.

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